

CLAIM AMENDMENTS

1 1. (original) An openable and closable umbrella that is
2 used for protection against the weather, e.g. sun and/or rain, and
3 where any rain water falling on it is deflected outward by a ~~shape~~
4 of a canopy, characterized in that
5 arms (30) supporting the canopy (10) are wholly above the canopy
6 (10) and do not pass through the canopy (10).

1 2. (original) The umbrella according to claim 1,
2 characterized in that the umbrella has
3 a shaft (20) anchorable in or on the ground or in the air
4 by an anchor (51),

5 a canopy (10) that is in open condition wavy, made of a
6 preferably nonstretching membrane or fabric, formed of a whole
7 number of polygonal sections with corners (12) defining alternating
8 high points (34) and low points (35), centrally traversed by the
9 shaft (20), centrally axially slidable along a vertical umbrella
10 axis (1) or preferably centrally fixed on the shaft (20), movable
11 from a closed folded position inclined to the axis (1), and having
12 an outer edge (11), and

13 at least one arm (30) extending radially from and pivoted
14 on the shaft (20) and extending in an open unfolded position from
15 the shaft (20) to corners (12).

1 3. (currently amended) The umbrella according to ~~one of~~
2 ~~the preceding claims~~ claim 2, characterized in that
3 the canopy (10) has an even number $2n$ of high points (34) and low
4 points (35) so it has n high points (34) and n low points (34) that
5 alternate at the edge (11) of the canopy (10) in the open position
6 and that impart to the canopy (10) a wavy shape, the high points
7 (34) tensioning the canopy (10) up and out and the low points (35)
8 tensioning the canopy (10) down and out.

4. (canceled)

5. (canceled)

6. (canceled)

1 7. (currently amended) The umbrella according to ~~one of~~
2 ~~the preceding claims~~ claim 2, characterized in that
3 the canopy (10) has a predetermined number n of low points (35),
4 the canopy (10) being drawn up to and geometrically intersecting
5 the umbrella axis (1) at a center (13) so as to set a conical shape
6 in the canopy (10).

8. (canceled)

1 9. (currently amended) The umbrella according to ~~one of~~
2 ~~the preceding claims~~ claim 2, characterized in that
3 the canopy (10) has a predetermined number n of edge rods (15), the
4 edge rods being secured at spaced locations or along their entire
5 length with the respective canopy edge (11) and being alternately
6 inclined to impart a wavy shape to the canopy (10).

1 10. (currently amended) The umbrella according to ~~one~~
2 ~~of the preceding claims~~ claim 2, characterized in that
3 the canopy (10) is tensioned by a preferably elastic annularly
4 closed canopy-edge bow (16), the edge bow (16) being secured at
5 spaced locations or along its entire length with the canopy edge
6 (11) and being oppositely inclined to impart a wavy shape to the
7 canopy (10).

1 11. (currently amended) The umbrella according to ~~one~~
2 ~~of the preceding claims~~ claim 2, characterized in that
3 at least one section of the canopy (10) is replaced by a canopy-
4 edge cable (14).

1 12. (currently amended) The umbrella according to ~~one~~
2 ~~of the preceding claims~~ claim 2, characterized in that
3 the canopy (10) is also secured at the center (13) to the shaft
4 (20) or to a sleeve (25), the shape of the canopy (10) being

5 variable by changing the axial position along the shaft (20) of the
6 center (13) and/or of the sleeve (25).

1 13. (currently amended) The umbrella according to one
2 ~~of the preceding claims claim 2~~, characterized in that
3 in the open position the canopy (10) is freely shiftable at the
4 shaft (20) along the shaft (20) according to how much the canopy
5 (10) is tensioned, the canopy (10) being sealed at the center (13)
6 to the shaft (20) and/or to the sleeve (25).

1 14. (currently amended) The umbrella according to one
2 ~~of the preceding claims claim 2~~, characterized in that
3 in the open position the canopy (10) is freely shiftable at the
4 shaft (20) along the shaft according to how much the canopy (10) is
5 tensioned, the canopy (10) being so cut out or constructed at the
6 center (13) that it lightly touches or freely surrounds the shaft
7 (20) and/or the sleeve (25).

1 15. (currently amended) The umbrella according to one
2 ~~of the preceding claims claim 2~~, characterized in that
3 in the open position the canopy (10) is freely shiftable at the
4 shaft (20) along the shaft according to how much the canopy (10) is
5 tensioned, the shaft (20) being supported from above and ending
6 above the canopy (10) so that the canopy (10) is not cutout out

7 where it intersects the umbrella axis (1) and only lightly touches
8 the shaft (20) from below or is spaced from it.

1 16. (currently amended) The umbrella according to ~~one~~
2 ~~of the preceding claims~~ claim 2, characterized in that
3 a line in the canopy (10) between a corner (12) and the umbrella
4 axis (1) is, due to a sewn-in strap or cable, straight when the
5 canopy (10) is under not excessive tension, so that the canopy (10)
6 forms a fold along the line between the corner (12) and the
7 umbrella axis (1).

1 17. (currently amended) The umbrella according to ~~one~~
2 ~~of the preceding claims~~ claim 2, characterized in that
3 a line in the canopy (10) between a corner (12) and the umbrella
4 axis (1) is, due to a sewn-in strap or cable, arcuate when the
5 canopy (10) is under not excessive tension, so that the canopy (10)
6 forms a fold along the line between the corner (12) and the
7 umbrella axis (1).

18. (canceled)

19. (canceled)

1 20. (currently amended) The umbrella according to ~~one~~
2 ~~of the preceding claims~~ claim 2, characterized in that

3 in the open position of the umbrella, longitudinal axes of the
4 upper arms (31) intersect the umbrella axis (1) at a common point
5 and the longitudinal axes of the lower arms (32) intersect the
6 umbrella axis (1) at another common point, the longitudinal axes of
7 the upper arms (31) and of the lower arms (32) intersecting the
8 umbrella axis (1) at different common points.

1 21. (currently amended) The umbrella according to one
2 ~~of the preceding claims~~ claim 2, characterized in that
3 in the open position of the umbrella some or all of the arms (30)
4 are tensioned upward into positions necessary for the open position
5 by respective cables (40) extending between outer ends (33) and the
6 shaft (20).

1 22. (currently amended) The umbrella according to one
2 ~~of the preceding claims~~ claim 2, characterized in that
3 in the open position of the umbrella some or all of the arms (30)
4 are tensioned upward into positions necessary for the open position
5 by diagonal spreaders (43) that extend under tension or compression
6 and are preferably pivoted between the arms (30) and the shaft
7 (20).

23. (canceled)

24. (canceled)

1 25. (currently amended) The umbrella according to one
2 ~~of the preceding claims claim 2~~, characterized in that
3 in the open position of the umbrella some or all of the arms (30)
4 are tensioned downward into positions necessary for the open
5 position by diagonal spreaders (43) that extend under tension or
6 compression and are preferably pivoted between the arms (30) and
7 the shaft (20).

26. (canceled)

1 27. (currently amended) The umbrella according to one
2 ~~of the preceding claims claim 2~~, characterized in that
3 the umbrella is opened by an opening and closing mechanism having a
4 sleeve (25) or shiftable telescoping shaft tip (21) on which all
5 the arms (30) are pivoted, and that can move downward along the
6 umbrella axis (1) so that all the arms (30) and the canopy (10)
7 mounted on these arms (30) are pushed or pulled by cables (40)
8 and/or diagonal spreaders (43) into positions necessary for the
9 open position until the canopy (10) is fully tensioned and the
10 entire system assumes a stable position as a result of limits
11 established by the static properties and geometry of the canopy
12 (10) or its parts, in particular the canopy edge (11), the edge
13 rods (15), the edge bow (16), or the edge cables (14) and/or by the
14 cables (40) or diagonal spreaders (43).

28. (canceled)

29. (canceled)

30. (canceled)

31. (canceled)

32. (canceled)

1 33. (currently amended) The umbrella according to one
2 ~~of the preceding claims~~ claim 2, characterized in that
3 the sum of the lengths a of the arms (30) measured from the shaft
4 (20) where they engage the respective diagonal spreaders (43) and
5 the lengths d of the diagonal spreaders (43) is the same for all
6 arms, where $a + d = \text{constant}$ so that in particular umbrellas with
7 upper arms (31) and lower arms (32) can be completely folded
8 together.

1 34. (currently amended) The umbrella according to one
2 ~~of the preceding claims~~ claim 2, characterized in that
3 the umbrella is closed by an opening and closing mechanism where
4 all the arms (30) and the canopy (10) are secured at the center
5 (13) to a common sleeve (25) so that lifting of the sleeve (25)

6 raises the center (13) and the canopy (10) assumes a closed
7 position folded together at the center.

35. (canceled)

36. (canceled)

37. (canceled)